



## **CATALINA SPAS™ OWNERS MANUAL**

## ***Welcome***

To the Catalina Spa Experience....

During the past 30 years satisfied customers have been responsible for Catalina Spas phenomenal growth and success in the spa industry. With over 50 years of manufacturing experience we have learnt that customer satisfaction can only be achieved by combining state of the art manufacturing technology with the ultimate in design for comfort and performance that is years ahead of its time. Catalina Spas has always been at the forefront of design.

Catalina Spas are CE approved. Because the spas have been through months of rigorous testing and either meet or exceed all safety requirements we are proud to add the Catalina trademark to them. Outstanding qualities with the ultimate in performance built into every Catalina Spas means you have invested in the best.

Catalina Spas prides itself on excellent customer service, so should you need to contact us, whether it is for servicing or consumables please quote the details below:

## ***My Spa***

Model:

Serial Number:

Date of Purchase:

Thank you for choosing a Catalina Spa, we would like to wish you, your family and friends many happy years of enjoyment using your spa.

Welcome to the Catalina family.

## IMPORTANT SAFETY INSTRUCTIONS

1. **READ AND FOLLOW ALL INSTRUCTIONS.**
2. **DANGER** – Do not lay across the foot well. Always, sit in an upright position.
3. **WARNING** – To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.
4. **CAUTION** – Water temperature may rise when jets are operating on “high” speed for extended duration.
5. A bonding lug has been provided on the outside of the Equipment Package electrical control box. The lug permits the connection of No. 8 AWG (8.42mm<sup>2</sup>) solid copper bonding conductor between the Equipment Module and all other electrical equipment and exposed metal in the vicinity, as may be needed to comply with local regulations.
6. **WARNING** – This unit must be hardwired only to a supply circuit that is protected by a Residual Circuit Device (RCD). Such a RCD is required by most building codes and should be provided by the installer and must be tested before each use. Consult RCD manufacturers’ instructions for correct testing and operation.
7. The electrical supply for this product must include a suitable rated switch or circuit breaker to open all ungrounded supply conductors to comply with the National Electrical Regulations. The disconnection means must be readily accessible to the tub occupant but installed at least 2 metres from spa water.
8. Spas must be installed with drainage for electrical equipment compartment.
9. Ensure the water always flows freely from the hydrotherapy jets within the spa. Any blockage or restriction of this water flow by persons or objects may damage system components, create an electrical shock hazard, and or cause water damage to the surrounding area.
10. To avoid damage to the pump(s) and heater, the Equipment must never be operated unless the spa is filled with water.
11. **DANGER** – Extreme caution must be exercised to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use this spa unless they are supervised at all times.
12. **WARNINGS – WATER TEMPERATURE.** Never heat your spa water above 40°C. If you do, it could cause serious health hazards.
13. **DANGER – RISK OF ELECTRICAL SHOCK.** Install at least 2 meters from all metal surfaces. (A spa may be installed within 2 metres of metal surfaces if each metal surface is permanently connected by a minimum 8.4 mm<sup>2</sup> sheathed copper conductor attached to the wire connector on the terminal box that is provided for this purpose.)
14. **DANGER – RISK OF ELECTRICAL SHOCK.** Do not permit any electrical appliance such as a light, telephone, radio, or television within 2 metres from spa.
15. The ideal temperature of your spa or hot tub should be between 35 – 40°C. This range is not only healthier but will also result in easier care of your spa.
16. Since excessive water temperatures have a high potential for causing fetal damage during the early months of pregnancy, pregnant or possibly pregnant women should limit spa temperatures to 38°C or less.
17. Before entering a spa, the user should measure the water temperature with an accurate thermometer since the tolerance of water temperature regulating devices may vary as much as +/- 5 degrees.
18. The use of alcohol, drugs, or medication before or during spa use may lead to unconsciousness with the possibility of drowning.
19. Persons suffering from obesity or with a medical history of heart disease, low or high blood pressure, circulatory system problems or diabetes should consult a physician before using a spa.
20. Persons using medication should consult a physician before using a spa since some medication may induce drowsiness while other medication may affect heart rate, blood pressure, and circulation.
21. Because occasional users of the spa may not be aware of all the potential risk associated with spa usage, they should be made aware of these Important Safety Instructions.
22. **CHEMICAL SAFETY – Play it safe with chemicals.**
23. Maintain sanitizer level of 3-5 ppm of bromine or chlorine.
24. Do not mix chemicals with each other before adding them to the water. Add only one chemical at a time.

25. Never add concentrated liquid chemicals directly to the water. Always dilute chemicals in a large plastic bucket or pail before adding them.
26. When diluting chemicals, always add them to the water. Never add water to the chemicals.
27. Always dilute the chemical slowly and evenly before adding into the water. Never add any chemical, diluted or otherwise, into any skimmer device.
28. Always store chemicals according to the manufacturer's label directions and keep them out of reach of children.

## **ELECTRICAL REQUIREMENTS**

### **230 VOLT INSTALLATION**

The Equipment Package is designed to operate at 230 volts, 50 Hz. Hardwired directly to the equipment pack; a dedicated service is required.

This unit must be hardwired only to a supply circuit that is protected by a Residual Circuit Device (RCD). Such a RCD is required by most building codes, should be provided by the installer and must be tested before each use. Consult RCD manufacturer's instructions for correct testing and operation. When the Equipment Package is connected to 230 volts, the Heater will provide approximately 3kW of heat when the Pump is operating in LOW or HIGH speed and the thermostat is calling for heat.

**IMPORTANT NOTE:** All electrical connections to the Equipment Package must be accomplished by a qualified electrician in accordance with Wiring regulations BS7671 (IEE Wiring Regulations 17<sup>th</sup> Edition) and installed to comply with building regulation Part P and in accordance with any other local or national electrical codes in effect at the time and place of installation. NOTE: Do not attempt to use a dryer, stove or other 230 volt line with the spa. A separate breaker and a dedicated line from your electrical panel is required. All electrical connections must be made in accordance with the wiring information contained in this manual, in the electrical control box or on the back of the field wiring access panel of the Equipment Package. Failure to provide proper electrical power to your spa will void your warranty. Installation by a licensed electrician is recommended. The Electrical supply for this product must include a suitable rated switch or circuit breaker to open ALL ungrounded supply conductors to comply with National wiring regulations. The disconnecting means must be within sight, and readily accessible to the user of the spa, but installed at least 2 meters from the spa.

## **INSTALLATION AND SURFACE PLACEMENT OF YOUR SPA**

In order for your spa to function properly, it must be placed on a smooth, LEVEL, self draining surface. The Equipment Module is installed to provide adequate drainage, and to prevent water from entering the electrical equipment area. If installing the spa indoors, the floors and structures beneath the spa must be protected against run-off. Concrete is preferred so that rain water and water spillover may run-off and not puddle underneath the spa causing the wood to rot away over a period of time (The only requirement for concrete is that you have 1" of slope per 10' for run-off). Other options are brick, stepping stones, or blocks. You could also place it on top of a wood deck. Wood decking requires that the deck must be constructed to support 36kg per square foot

It is important to note that soft surfaces, even when stepping stones are used to evenly distribute the weight of the spa, will still have a tendency to settle thus resulting in an unleveled spa. Remember, placing the spa on grass or dirt may increase the amount of debris which is inadvertently brought into the spa water from the user's feet. When considering an installation site, always allow for access to the equipment compartment of the spa and enough clearance to pull the door out for future service if necessary. If accessory items will be installed on or around the spa (cover lift, gazebos, steps, bar, planters), allow for additional space around the spa's perimeter.

Please note that some countries may require a permit for installation of electrical circuits or the construction of exterior structures (decks and gazebos). In addition, some counties may require permits for the installation of a portable spa. Check your local codes for compliance. **IMPORTANT:** To ensure you will have an opportunity to use your spa soon after delivery, it is very important that you select the site prior to setting your spa in place and have a qualified electrician install the equipment if necessary.

If you have any questions or concerns, please contact your local Catalina Spas dealer first. Or you can contact us via our website at [Info@catalinaspas.co.uk](mailto:Info@catalinaspas.co.uk) or [www.catalinaspas.co.uk](http://www.catalinaspas.co.uk)

## START UP PROCEDURES

### FILLING UP YOUR SPA



Once you have installed your spa on its foundation and all electrical requirements have been met, you may begin the necessary steps in filling your spa. All gate valves must be OPEN. There are two twist and turn locking gate valves located under the skirt on each side of the Equipment Pack. To open the gate valve, pull handle outward approximately 3" until it stops and snaps into place. These must be opened prior to operation to allow water to flow through the Equipment Package (2 pump models have 4 gate valves). Make sure the filter cartridge (basket and

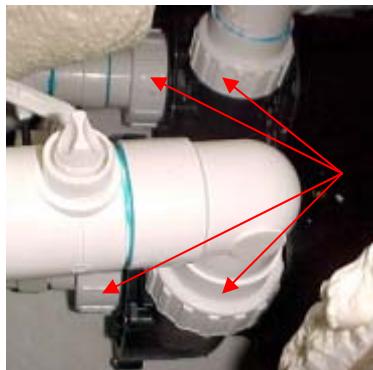


weir, if so equipped) is in place. Fill the spa using a garden hose until the water is halfway up the "throat" of the skimmer, otherwise it will suck air, which will cause the pump motor to "run dry" and burn out. This repair would not be covered under warranty. You should check the water level of your spa each day as there is normal evaporation each day and more often when spa is used frequently.

### IMPORTANT: Purge the air out of the system

When purging air out of the system, be sure the pump(s) are turned OFF. Open valves counterclockwise to release air until water runs out. Then close the valves. There will be one air bleed valve per pump. So, a **two pumps** system would have **two** air bleed valves. (see red arrow on right to locate air bleed valve) Check and tighten the PUMP UNIONS. The pump unions might have become loose during shipment. There are two pump unions per pump. So, a **two pumps** system would have

**four** pump unions. (see red arrows on the left)



Press function button switch on. It is important that the pump's HIGH speed be operating for several minutes to assure that all the air has been removed from the system. Check to see if all functions of the spa are operational. Low speed is used for filtering and heating. High speed is used for jet action.

Additional functions may include operation of a blower and/or pump and blower together. Please refer to the Special Product Features section for specific product functions. To avoid damage to the pump and heater, the Equipment Package MUST NEVER be operated unless the spa is filled with water. Be sure that water always flow freely from the hydro therapy jets within the spa. Any blockage or restriction of this water flow by persons or objects may damage system components, create an electrical shock hazard, and/or cause water damage to the surrounding area.

### WATER TESTING

It is recommended that you test your spa water regularly with an accurate test kit or test strips. These are available from your local Authorized Catalina Spa Dealer. Also, be sure to follow chemical manufacturer's instructions for chemical use.

### pH CONTROL

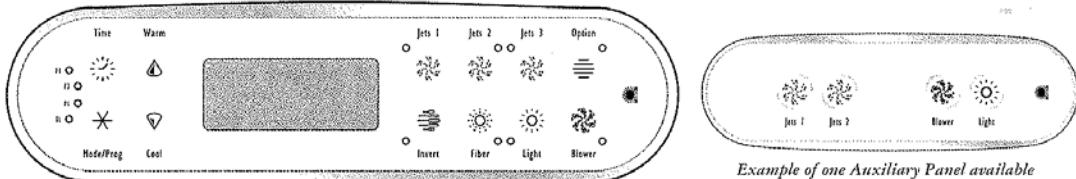
All water solutions have pH, which is a measure of the acid to alkali relationship. A pH reading of 7.0 is neutral, a lower reading is acidic and a higher reading is alkali. The proper pH for spa water is between 7.4 and 7.6. High pH above 7.6 can reduce sanitizer efficiency, cloud the water, promote scale formation on surfaces and equipment, and interfere with filter operations. When pH is too high,

add a pH decreaser. Low pH (below 7.2) is equally damaging and can cause equipment corrosion, water that is irritating, and rapid sanitizer dissipation. Add pH increaser to bring the pH higher.

### SPA CABINET

It is important that the wooden spa cabinet is treated every 12 months with Super Deck Transparent Stain and Sealer, which can be purchased from your dealership.

### OPERATION INSTRUCTIONS



## GL8000

If your spa is not fully equipped, the panel buttons on your spa control may not be laid out as shown or respond as described in this document. The pump responsible for heating and filtration (pump 1 on low speed) will be referred to simply as the pump. Timeouts refer to a preset length of time that a function is programmed to operate before shutting off automatically. Certain conditions (filters or freeze) can cause a function to operate longer, while faults can cause a function to operate for a shorter length of time. The system keeps track of timeouts regardless of other conditions occurring. Before turning on the spa ensure toggle switches 2,3 and 4 are set up so that heating only occurs in low speed as this will be what the spa amperage draw is based on.

#### Initial Start-up

When your spa is first actuated, it will go into Priming mode (after displaying some configuration information). The Priming mode will last for up to 4 minutes and then the spa will begin to heat and maintain the water temperature in the Standard mode. You can exit Priming mode early by pressing "Warm" or "Cool."

#### Temp Set (80.0°F - 104.0°F / 26.0°C - 40.0°C)

The start-up temperature is set at 100°F/37.5°C. The last measured temperature is constantly displayed on the LCD. **Note that the last measured spa temperature displayed is current only when the pump has been running for at least 2 minutes.**

#### Warm / Cool

Press the "Warm" or "Cool" button once to display the set temperature. Each time either button is pressed again, the set temperature will increase or decrease depending on which button is pressed. After three seconds, the LCD will automatically display the last measured spa temperature.

#### Time

When time hasn't been programmed, the TIME icon flashes. To set the time, press "Time" then "Mode/Prog" and follow prompts, using the "Warm" and "Cool" buttons to adjust time. If your spa has an optional pH/Orp sensor, pressing "Time" twice will display the current pH level; pressing it three times will display the current Orp.

#### Invert

Press the "Invert" button to reverse the display if it appears upside down. You may also press the "Warm" or "Cool" button, followed by the "Blower" button to reverse the display.

#### Jets 1

Press the "Jets 1" button once to turn pump 1 on or off, and to shift between low and high speeds if equipped. If left running, the low speed turns off after 2 hours and the high speed turns off after 15 minutes. The low speed of pump 1 runs when the blower or any other pump is on. It may also activate for at least 2 minutes every 30 minutes to detect the spa temperature (polling) and then to heat to the set temperature if needed, depending upon mode. When the low speed turns on automatically, it cannot be deactivated from the panel; however, the high speed may be started.

#### Jets 2

Press the “Jets 2” button once to turn pump 2 on or off. If left running, the pump will turn off after 15 minutes.

#### **Jets 3 (optional)**

Press the “Jets 3” button once to turn pump 3 on or off. If left running, the pump will turn off after 15 minutes.

#### **Light**

Press the “Light” button to turn the spa light on or off. If left on, it will automatically turn off after 4 hours.

#### **Fiber (optional)**

If a fiber-optic light with wheel is installed, press the “Fiber” button once to start the light and wheel, press it again to stop the wheel, and then again to turn the light off. The fiber icon stands still when the fiber optic light is on by itself, and rotates when the color wheel is also on. Both spa light and fiber optic light can be used simultaneously. If either light is left on, it will automatically turn off after 4 hours.

#### **Mode/Prog**

This button is used to switch between standard, economy, and sleep modes. Press “Mode/Prog” to enter mode programming, press “Cool” to cycle through to desired mode (LCD flashes until confirmed), then press “Mode/Prog” to confirm selection.

**Standard mode** is programmed to maintain the desired temperature. Note that the last measured spa temperature displayed is current only when the pump has been running for at least 2 minutes. The “STANDARD” icon will display until the mode is changed.

**Economy mode** heats the spa to set temperature only during filter cycles. The “ECONOMY” icon will display until mode is changed.

Pressing “Jets 1” while in Economy mode puts the spa in **Standard-in-Economy mode**, which operates the same as Standard Mode, then reverts to Economy Mode automatically after 1 hour. During this time, a press of the “Mode” button will revert to Economy Mode immediately.

**Sleep mode** heats the spa to within 20°F of the set temperature only during filter cycles. The “SLEEP” icon will display until mode is changed.

#### **Blower (optional)**

Press the “Blower” button to turn on or off. If left on, the blower will automatically turn off after 15 minutes. (**Thermal overload protection will shut blower down automatically when it gets too hot.**)

**Blower will resume normal operation after cooling off. This is the normal function of the blower.**

#### **Standby Mode**

Pressing “Warm” or “Cool” then “Jets 2” will turn off all spa functions temporarily. This is helpful when changing a filter. Pressing any button resets the spa.

#### **Preset Filter Cycles**

There are two filter cycles per day. The start/end times of each cycle are programmable. To program start/end times, continue following prompts after setting time as instructed above, pressing “Mode/Prog” to advance to the next setting (or to exit after the last setting). The default filter cycles are as follows:

The first filter cycle is automatically activated at 8:00 AM and operates the pump until 10:00 AM. The F1 indicator light will light when filter 1 is running.

The second filter cycle is automatically activated at 8:00 PM and operates the pump until 10:00 PM. The F2 indicator light will light when filter 2 is running. The pump and the ozone generator will run during filtration. At the start of each filter cycle, the blower will run on for 30 seconds to clean out the air channels.

#### **Clean-up Cycle (optional)**

When the pump or blower is turned on by a button press, a clean-up cycle begins 30 minutes after the pump or blower is turned off or times out. The pump and the ozone generator will run for one hour.

#### **Ozone (optional)**

The ozone generator (if installed) runs during filter cycles (except when pump 1 is operating at high speed) and during clean-up cycles.

#### **Freeze Protection**

If the temperature sensors detect a drop to 6°C within the heater, then the pumps and the blower will automatically activate to provide freeze protection. The equipment stays on until 4 minutes after the

sensors detect that the spa temperature has risen to 7°C or higher. In colder climates, an optional additional freeze sensor may be added to protect against freeze conditions that may not be sensed by the standard sensors. Aux freeze sensor protection acts similarly except with the temperature thresholds determined by the switch and without a 4-minute delay in turn off. See your dealer for details.

#### **Locking the Panel**

Press "Time" "Jets 1" then "Warm" within 3 seconds. When locked, the PL indicator light will light. All buttons are frozen except the "Time" button. To unlock the panel, press "Time" "Jets 1" then "Cool."

#### **Locking the Set Temperature**

Press "Warm" or "Cool" then "Time," "Jets 1," and "Warm" within 3 seconds to activate the lock. The TL indicator light will light when the set temperature is locked. To unlock the set temperature, press "Warm" or "Cool" then "Time," "Jets 1" and "Cool."

#### **Setting the Time**

Once the spa has been properly connected the first time, notice the word "Time" flashing on the screen. Press Time Then Mode/Prog . Select the hour by pressing Warm or Cool (each press changes the time by 1 hour). Press Mode / Prog to enter the hour. Select the minutes by pressing Warm or Cool (each press changes the time by 1 minute). Press Mode / Prog to set the time and enter into the optional filter cycle programming. **OR** press time to set the time and exit.

#### **Optional Filter Cycle Programming**

You are not required to set filter cycles; however, it is an option available to you. To change the filter cycle settings:

Press Time, Mode/ Prog and Mode/Prog again within 3 seconds. You will see "SET FILTER 1" (AM cycle) and a flashing "START TIME" icon appear on the display. Press Warm or Cool to choose the filter start time hour. Enter the hour by pressing Mode/Prog . Press Warm or Cool to choose the filter start time minutes. Enter the minutes by pressing Mode/Prog . Each press changes the start time by 5 minutes.

Press Mode/Prog to see "SET FILTER 1" and a flashing "END TIME" icon. Adjust the time as done above.

Press Mode/Prog to see "SET FILTER 2" (PM cycle) and a flashing "START TIME" icon and proceed as above.

Press Mode/Prog to see "SET FILTER 2" and a flashing "END TIME" icon. Adjust the time as done above.

If you would like to select **continuous filtration**, set the filter 1 start and end times to be the exact same time. Pressing Mode/Prog will enter the new filter cycle times into the system and display the current water temperature.

*Pressing Time at any time during this programming sequence will save the values entered up to that point and exit programming.*

#### **Diagnostic Messages**

Message	Meaning	Action Required
	No message on display.	Power has been cut off to the spa. The control panel will be disabled until power returns. Spa settings will be preserved for 30 days with a battery backup.
<b>HTR TEMP LMT</b>	"Overheat" - The spa has shut down. One of the sensors has detected 118°F at the heater.	<b>DO NOT ENTER THE WATER.</b> Remove the spa cover and allow water to cool. Once the heater has cooled, reset by pushing any button. If spa does not reset, shut off the power to the spa and call your dealer or

		service organization.
<b>SPA TEMP LMT</b>	"Overheat" - The spa has shut down. One of the sensors has detected that the spa water is 110°F.	<b>DO NOT ENTER THE WATER.</b> Remove the spa cover and allow water to cool. At 107°F, the spa should automatically reset. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
<b>FREEZE COND</b>	"Ice" - Potential freeze condition detected.	No action required. The pumps and the blower will automatically activate regardless of spa status.
<b>SENSOR A SERVICE RQD</b>	Spa is shut down. The sensor that is plugged into the Sensor "A" jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat situation and disappear when the heater cools.)
<b>SENSOR B SERVICE RQD</b>	Spa is shut down. The sensor that is plugged into the Sensor "B" jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat situation and disappear when the heater cools.)
<b>SENSOR SYNC</b>	Sensors are out of balance. If this is the only message displaying, it may just be a temporary condition. If the display also reads " <b>SERVICE REQ'D</b> ," the spa is shut down.	If the problem persists, contact your dealer or service organization.
<b>HTR FLOW LOW</b>	A substantial difference between the temperature sensors was detected. This could indicate a flow problem.	Check water level in spa. Refill if necessary. If the water level is okay, make sure the pumps have been primed. If problem persists, contact your dealer or service organization.
<b>LOW FLOW</b>	Persistent low flow problems. (Displays on the fifth occurrence of the "HTR FLOW LOW" message within 24 hours.) Heater is shut down, but other spa functions continue to run normally.	Follow action required for "HTR FLOW LOW" message. Heating capacity of the spa will not reset automatically; you may press any button to reset.
<b>HEATER MAY BE DRY – WILL RETEST SHORTLY</b>	Inadequate water detected in heater.	Check water level in spa. Refill if necessary. If the water level is okay, make sure the pumps have been primed. Press any button to reset.

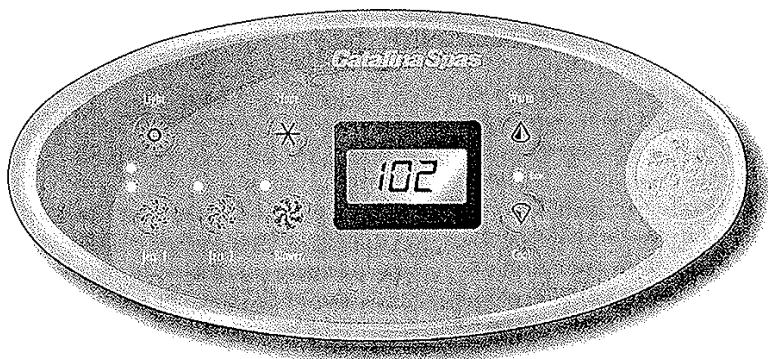
<b>HEATER DRYSERVICE RQD</b>	Inadequate water detected in heater. (Displays on third occurrence of "HEATER MAYBE DRY - WILL RETESTSHORTLY" message.) Spa is shut down.	Follow action required for "HEATER MAY BE DRY - WILL RETEST SHORTLY" message. Spa will not automatically reset; you may press any button to reset.
<b>PRIMING MODE TAKES 4 MIN</b>	When your spa is first actuated, it will go into Priming mode.	See the M-7 Installation Instruction Manual for complete instructions on Power-up and Pump Priming. The Priming mode will last for up to 4 minutes and then the spa will begin to heat and maintain the water temperature in the Standard mode.
-- F or -- C	Temperature unknown.	After the pump has been running for 2 minutes, the temperature will be displayed.
---	Temperature not current in Economy or Sleep mode.	In Economy or Sleep mode, the pump may be off for hours outside a filter. If you wish to see the current spa temperature, either switch to Standard mode or turn Jets1 on for at least two minutes
<b>BACKUP FAIL</b>	Internal problem detected.	Repair required. Contact your dealer or service organization.
<b>STANDBY MODE</b>	Standby Mode has been activated by pressing a button combination on the user panel.	Press any button to leave Standby Mode and return to normal operation.
<b>PH IS LOW RAISE PH</b>	pH is low.	Add pH increaser according to manufacturer's instructions.
<b>PH IS HIGH</b>	pH is high..	Add pH decreaser according to manufacturer's instructions
<b>SANITIZER LOW</b>	Sanitizer is low.	Add sanitizer according to manufacturer's instructions.
<b>SANITIZER HIGH</b>	Sanitizer is high.	Remove spa cover and allow sanitizer to dissipate.

**Periodic Reminder Messages (Press the "Mode" button to reset a displayed reminder)**

**Message Frequency Action Required**

Message	Frequency	Action Required
CHECK PH	Every 7 days	Test and adjust chemical levels per manufacturer's instructions.
CK SANITIZER	Every 7 days	Test and adjust chemical levels per manufacturer's instructions.
CLEAN FILTER	Every 30 days	Remove, clean, and reinstall filter per manufacturer's instructions.
TEST GFCI	Every 30 days	Test & reset GFCI per

		manufacturer's instructions
DRAIN WATER	Every 90 days	Drain and refill spa per manufacturer's instructions
CHANGE MINERAL CARTRIDGE	Every 90 days	If applicable, change mineral cartridge
CLEAN COVER	Every 180 days	Clean and condition cover per manufacturer's instructions
TREAT WOOD	Every 180 days	Clean and condition wood per manufacturer's instructions.
NEW FILTER	Every 365 days	Install new filter.



**GL2000**

#### **Initial Start-up**

When your spa is first actuated, it will go into priming mode (after displaying some configuration information) Please see the M-7 Installation Instruction manual for complete instructions on Power-up and Pump Priming.

The priming mode will last for up to 4 minutes

And then the spa will begin to heat and maintain the water temperature in the Standard mode. You can exit Priming mode early by pressing "Cool" or "Warm"

#### **Cool/Warm**

Press the "Cool" or "Warm" button once to display the set temperature. Each time either button is pressed again, the set temperature will increase or decrease depending on which button is pressed. After three seconds, the LCD will automatically display the last measured spa temperature.

#### **Jets 1**

Press the "Jets 1" button once to turn pump 1 on or off, and to shift between low and high speeds if equipped. If left running, the pump will turn off after a timeout period. The pump 1 low speed timeout on some systems may be as long as 4 hours.

On non-circ systems, the low speed of pump 1 runs when the blower is any other pump is on. It may also activate for at least 1 minute every 30 minutes to detect the spa temperature (polling) and then heat to set temperature if needed, depending upon mode. When the low speed turns on automatically, it cannot be deactivated from the panel; however, the high speed may be started.

#### **Preset Filter Cycles**

On all systems, the pump and the ozone generator will run during filtration. At the start of each filter cycle, the blower will run briefly on its highest speed to purge the air channels. The lowest speed of

any other pumps will also run briefly. On some circ systems, pump 1 may also run for the duration of the filter.

(Note: This panel cannot be used to program filter cycles for systems that are programmed by time rather than by duration. For these systems, a larger panel is needed and the following description does not apply.)

The first filter cycle ("Day") begins 6 minutes after the spa is powered up. The second filter cycle ("night") begins 12 hours later. Filter duration is programmable for 1-12 hours ("F1""F12"). The default filter duration can vary from system to system. To program, press "Cool" or "Warm" then "Jets1." Press "Cool" or "Warm" to select the filter duration. Press "Jets 1" to select the number of filter cycles. The display will show "dn" (both "Day" and "Night" cycles); "d" (day cycles only); or "n" ("Night" cycles only). Press "Cool" or "Warm" to adjust, then press "Jets 1" to exit the programming mode. For continuous filtration, use "F12" and "dn"

#### **Mode**

This button is used to switch between Standard, Economy, and Sleep modes. Press "Mode" to enter mode programming, press "Cool" to cycle through to desired mode (LCD flashed until confirmed), then press "Mode" to confirm selection.

**Standard Mode** maintains the desired temperature. Note that the last measured spa temperature displayed is current only when the pump has been running for at least 1 minute. "Std" will appear on the display momentarily when you switch into standard mode.

**Economy Mode** heats the spa to set temperature only during filter cycles. "Ecn" will appear solid when the temperature is not current and will alternate with the temperature when the temperature is current.

Pressing "Jets 1" while in Economy mode put the spa in Standard-In-Economy mode ("SE") which operates the same as standard mode, then reverts to Economy Mode automatically after 1 hour. During this time, pressing "Cool" or "Warm" followed by "Light" will revert the mode to Economy immediately.

**Sleep Mode** heats the spa to within 20°F (11°C) of the set temperature only during filter cycles. "SLP" will appear on the display until mode is changed.

#### **Standby Mode**

Pressing "Cool" or "Warm" followed by "Blower" or "Jets 2" or "Aux" will turn off all spa functions temporarily. This is helpful when changing a filter. Pressing any button exits standby mode. On some systems the "Jets 1" button will control the pump in Standby Mode ("Drain Mode"). In this case, press any other button to exit. System will revert to previous mode after 1 hour.

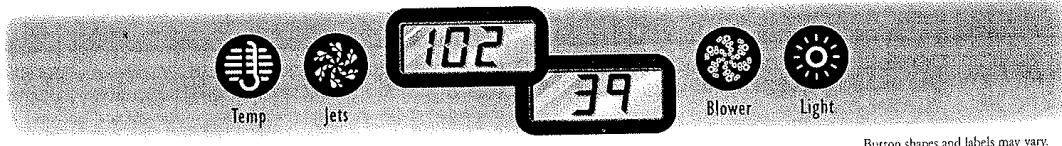
#### **Locking Features**

If this panel is used as the main panel, locking features will not be available. If this panel is used as an auxiliary remote or additional panel, it will lock when the main panel is locked. To unlock this panel, unlock the main panel.

#### **Additional Features**

Refer to your User Guide for additional details and features that are available with your ML554 panel and EL/GL Series system.

Message	Meaning	Action Required
	No message on display. Power has been cut off to the spa	The control panel will be disabled until power returns. Spa settings will be preserved until next power up.
--	Temperature unknown	After the pump has been running for 2 minutes, the current water temperature will be displayed.
HH	"Overheat" – The spa has shut down. * Once of the sensors has detected 118°F/47.8°C at the heater	<b>DO NOT ENTER THE WATER.</b> Remove the spa cover and allow water to cool. Once the heater has cooled, reset by pushing any button. If spa does not reset, shut off the power to the spa and call your dealer or service organization
OH	"Overheat" – The spa has shut down. * 8 Once of the sensors has detected that the spa water is 110°F / 43.5°C	<b>DO NOT ENTER THE WATER.</b> Remove the spa cover and allow water to cool. At 107°F/41.7°C, the spa should automatically reset. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
SA	Spa is shut down. * The sensor that is plugged into the Sensor "A" jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat condition.)
Sb	Spa is shut down. * The sensor that is plugged into the Sensor "B" jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat condition.)
Sn	Sensors are out of balance. If alternating with spa temperature, it may just be a temporary condition. If flashing by itself, spa is shut down.*	If the problem persists, contact your dealer or service organization.
HL	A significant difference between temperature sensors has been detected. This could indicate a flow problem	If the water level is normal, make sure all pumps have been primed. If the problem persists, contact your dealer or service organization.
LF	Persistent low flow problems. (Displays on the fifth occurrence of HL message within 24 hours) Heater is shut down, but other spa functions continue to run normally.	Follow action required for HL message. Heating capability of the spa will not reset automatically; you may press any button to reset.
Dr	Possible inadequate water, poor flow, or air bubbles in detected in the heater. Spa is shut down for 15 minutes	If water level is normal, make sure all pumps have been primed. Press any button to reset. This message will reset within 15 minutes. If the problem persists, contact your dealer or service organization.
dY	Inadequate water detected in heater. (Displays on third occurrence of dr message.) Spa is shut down *	Follow action required for dr message. Spa will not automatically reset. Press any button to reset manually.
IC	"Ice" – Potential freeze condition detected.	No action required. All equipment active regardless of spa status.



Button shapes and labels may vary.

## CAT 500

### Initial Start-up

Your spa will enter Priming Mode (Pr) when it is energized. During Priming Mode, press "Jets" button(s) repeatedly and be sure all pumps are free of air. Priming Mode lasts less than 5 minutes. Press "Temp" to exit. After priming mode, the spa will run in Standard Mode (see Mode Section). Some panels may not have a "Temp" button. On these panels the "Set", "Warm" or "Cool" buttons are used.

The pump responsible for heating and filtration (pump 1 low-speed on non-circ system, or the circ pump on circ systems) will be referred to simply as the pump. In multi-button sequences, if the button are pressed too quickly in sequence, they may not register.

### Temp Control (80°F – 104°F / 26°C – 40°C)

The last measured water temperature is constantly displayed. The water temperature displayed is current only when the pump has been running for at least 2 minutes.

On panels with a single "Temp" or "Set" button, to display the set temperature, press the button once. To change the set temperature, press the button a second time before the display stops flashing. Each press of the button will continue to either raise or lower the set temperature. If the opposite direction is desired, allow the display to revert to the current water temperature. Press the button to display the set temperature, and again to make the temperature change in the desired direction.

On panels with "Warm" and "Cool" buttons, to display the set temperature, press "Warm" or "Cool" once. To change the set temperature, press a temperature button again before the display stops flashing. Each press of "Warm" or "Cool" will adjust the set temperature.

After three seconds, the display will stop and begin to display the current spa temperature.

### Jets 1

Press "Jets 1" to turn pump 1 on or off, and to shift between low and high speeds (if equipped). The low-speed will turn off after 4 hours. High-speed will turn off after 15 minutes. Low-speed may run automatically at times, during which it cannot be deactivated from the panel, but high-speed may be operated.

### Jets2/Jets3/Blower (If equipped)

Press the corresponding button once to turn the device on or off. The device will turn off after 15 minutes. Pump 2 may be two-speed on some systems.

Some systems use this once button to control two devices. The first button press will activate once device. Press again to have both devices activate. Press again to turn off the first device only. Press once more time to turn both devices off.

### Light

Press "Light" to operate the spa light. Turns off after 4 hours.

### Mode

Depending on the system configuration, mode changing may not be available and will be locked in Standard Mode.

Mode is changed by pressing "Temp", then "Light"

**Standard Mode** maintains set temperature. St will be displayed momentarily when you switch into Standard Mode.

**Economy Mode** heats the spa to the set temperature only during filter cycles. Ec will display when water temp is not current, and will alternate with water temp when the pump is running.

**Sleep Mode** heats the spa to within 20°F/10°C of the set temperature only during filter cycles. SL will display when water temp is not current and will alternate with water temp when the pump is running.

#### **Preset Filter Cycles**

The first preset filter cycle begins 6 minutes after the spa is energized. The second preset filter cycle begins 12 hours later. Filter duration is programmable for 2, 4, 6, or 8 hours or for continuous filtration (indicated by FC). The default filter time is 2 hours for non-circ systems and 4 hours for circ systems.

To program, press “Temp” then “Jets 1”. Press “Temp” to adjust. Press “Jets 1” to exit programming.

**For non-circ systems**, low-speed pump 1 and the ozone generator (if installed) run during filtration.

**For circulation systems**, the circ pump and the ozone generator (if installed) run 24 hours. In hot environments, the circ pump may turn off for 30 minute periods, except during filter cycles. At the beginning of each filter cycle all other equipment will run briefly to purge the plumbing.

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--	Temperature unknown	After the pump has been running for 2 minutes, the current water temperature will be displayed.
HH	"Overheat" – The spa has shut down. * Once of the sensors has detected 118°F/47.8°C at the heater	<b>DO NOT ENTER THE WATER.</b> Remove the spa cover and allow water to cool. Once the heater has cooled, reset by pushing any button. If spa does not reset, shut off the power to the spa and call your dealer or service organization
OH	"Overheat" – The spa has shut down. * 8 Once of the sensors has detected that the spa water is 110°F / 43.5°C	<b>DO NOT ENTER THE WATER.</b> Remove the spa cover and allow water to cool. At 107°F/41.7°C, the spa should automatically reset. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
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Sn	Sensors are out of balance. If alternating with spa temperature, it may just be a temporary condition. If flashing by itself, spa is shut down.*	If the problem persists, contact your dealer or service organization.
HL	A significant difference between temperature sensors has been detected. This could indicate a flow problem	If the water level is normal, make sure all pumps have been primed. If the problem persists, contact your dealer or service organization.
LF	Persistent low flow problems. (Displays on the fifth occurrence of HL message within 24 hours) Heater is shut down, but other spa functions continue to run normally.	Follow action required for HL message. Heating capability of the spa will not reset automatically; you may press any button to reset.
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dY	Inadequate water detected in heater. (Displays on third occurrence of dr message.) Spa is shut down *	Follow action required for dr message. Spa will not automatically reset. Press any button to reset manually.
IC	"Ice" – Potential freeze condition detected.	No action required. All equipment active regardless of spa status.

\* Even when spa is shut down, some equipment will turn on if freeze protection is needed.

**Warning! Shock Hazard! No User Serviceable Parts.**

Do not attempt service of this control system. Contact your dealer or service organization for assistance. Follow all owner's manual power connection instructions. Installation must be performed by a licensed electrician and all grounding connections must be properly installed.

**DO NOT ENTER THE WATER.** If the spa water has reached 44°C remove the spa cover to cool the water. Overheating may occur if the filter cycle is set too long. At 43°C, the spa should reset itself. If the high-limit sensor detects 47°C at the heater, the spa will shut down. When the heater cools to 43°C, press any button to reset the spa. If the spa will not reset, then shut off power to the spa and call your dealer or service organization.

**Flow Switch Detection** A pressure switch is not working. Call your dealer or service organization.

**5n Sensor (Spa is deactivated)**

The high-limit sensor or water temperature sensor is not working. Call your dealer or service organization.

**GENERAL MAINTENANCE**

Every two to five months, drain your spa, clean with spa multi-purpose cleaner (found in your chemical maintenance kit) and then polish with a silicone sealant polish.

To temporarily remove foam, apply anti foaming agent to foamy areas. To correct the condition, be sure the water is balanced. Add clarifier and a sanitizer.

Be sure to add a metal build up inhibitor each time you are refilling your spa. Shock treat the water with a non-chlorine shock each week.

It is important to use scale and stain inhibitor weekly to prevent calcium deposits from damaging your spa and equipment. If this happens, it could void the warranty. Refer to your chemical handbook for further information on water chemistry and troubleshooting.

**DRAINING THE WATER**

Locate drain hose near or around the equipment. Remove cap and attach garden hose. Open the black valve on hose bib to drain spa.



**FILTER MAINTENANCE**

At least once a week, check and clean the skimmer basket and weir to insure proper filter flow. Remove leaves, foreign matter and debris when present. It is very important to maintain your spa filter cartridge and keep it clean and free of particles that can obstruct water flow. A clean filter will permit the hydrotherapy system to function properly and also allows more efficient filtering. Depending on how frequently your spa is used, we recommend cleaning the spa filter cartridge every four to six weeks. If this is not done, the filter may clog and restrict water flow, which causes inadequate filtration and poor jet performance.

**Filter Sizes**

**Type Total Square Feet Catalina Part #**

Size	Part Number
Set of Two 35 sq.ft	050
Set of Two 50 sq.ft	054
Set of Two 100 sq.ft	058

**CLEANING THE FILTER**

Turn filter basket clockwise to unlock and pull basket and weir out. Carefully pull up the filter cartridge and bring it out of the spa. Rinse cartridge using a garden hose. Rotate and separate filter pleats while spraying water to remove all debris possible. Let the filter dry and look for calcium deposits (scaling) or an oil film. If you find these, you will need to deep clean your filter cartridge with a "spa filter cleaning" solution to break down and remove mineral deposits and oils.

## REMOVAL OF LARGE SIDE BY SIDE FILTER

### Step 1:

To remove weir gate assembly or skimmer door, pull it up towards you and lift out.



### Step 2:

To remove basket assembly, slide out, lift away and remove the basket.



### Step 3:

To remove the 2 – filter cartridges, turn it counter-clockwise to unthread and lift up and out.



### Step 4:

To reinstall, reverse the process.

## REMOVAL OF OTHER FILTER TYPES

Step 1: Reach in and pull skimmer door toward you.

Step 2: Reach in and turn leaf basket, pull up and lift out.

Step 3: Reach in and remove the spacer plug.

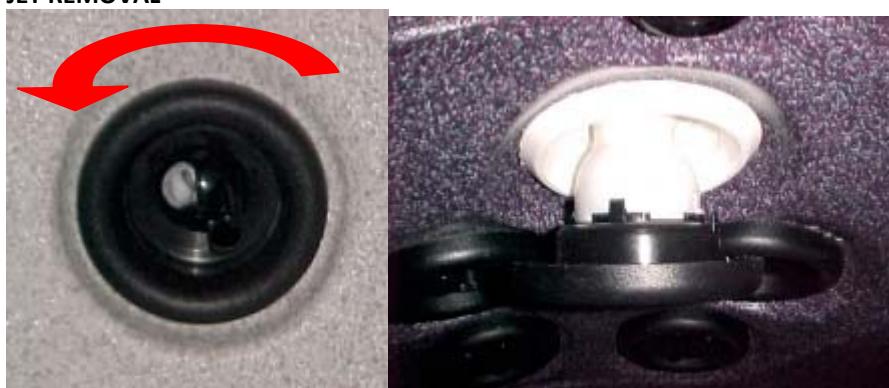
Step 4: Reach in and remove the filter cartridge(s).

Step 5: To reinstall, reverse the process.

## MAHOGANY CABINET MAINTENANCE

The mahogany wood cabinet must be re-stained with SUPERDECK DUCKBACK OIL every six months to keep the mahogany wood looking new and lasting. The SUPERDECK DUCKBACK OIL can be purchased at your local Catalina Spas dealer.

## JET REMOVAL



Turn jet counter-clockwise to loosen. Then slide out to remove jet.

## SPECIAL PRODUCTS FEATURES

### AIR CONTROL VALVES

To adjust the amount of air in the jet stream, turn the air control valves. For maximum hydrotherapy, open the air control valves by turning counterclockwise. To close, turn clockwise. When the valves are

closed, the water only circulates. When heating and ozonating, make sure the air control valves are closed. When using a spa with air blower, make sure all air control valves are opened even when spa is not in use.



### WATER CONTROL VALVES

The water control valves direct the flow from one jet system to another. It is used to operate different sets of jets. ie. neck jets and waterfall.



### TOPSIDE STEREO CONTROL

Easy access water proof remote stereo control for controlling of stereo without getting out of the water.



### ENTERTAINMENT SYSTEM

For added luxury, you can equip certain spas with Flat Panel TV, AM/FM CD Stereo, iPod docking station and/or DVD Player.



### JET VARIETIES

E.g. Directional, Oscillating and Twin Roto, just to name a few.

## Care of the Exterior

### Spa Shell

Your spa shell is made of acrylic. Stains and dirt generally will not adhere to the surface.

Using a soft rag or a nylon scrubber should easily remove most dirt. Most household chemicals are harmful to your spa's shell. See your dealer for the best product to use. Always thoroughly rinse off any spa shell cleaning agent with fresh water.

NOTES: Iron and copper in the water can stain the spa shell if allowed to go unchecked. Ask your dealer about a stain and scale inhibitor to use if your spa water has a high concentration of dissolved minerals.

The use of alcohol or any household cleaners other than those listed to clean the spa shell surface is NOT recommended. DO NOT use any cleaning products containing abrasives or solvents since they may damage the shell surface. NEVER USE HARSH CHEMICALS! Damage to the shell by the use of harsh chemicals is not covered under the warranty.

IMPORTANT: Some surface cleaners contain eye and skin irritants. Keep all cleaners out of the reach of children and use care when applying.

### **Chemicals**

Chemicals are used to sanitize the water and to balance the pH level. This is done to maintain clear and sanitary water at all times. When the water chemistry is out of balance, a number of things can happen: many types of bacteria form inside the warm waters of your spa and inside the plumbing and fittings. For this reason, the sanitized level must be constantly monitored and adjusted. The pH level affects how well the sanitizer works and the acidity level of the water. The closer to 7.2 the Ph, the more effective the sanitizing agent will work, and last.

Therefore, it is important to keep your chemical balance in check as much as possible. Your warranty does not cover pH damage to your equipment such as cracking or peeling of jet housing. Continuous high Ph levels will cause sealing and will stop the heater from working and very low Ph levels will cause trace metals in water and cause malfunctions.

Remember:

You cannot keep the chemicals perfectly balanced in a spa constantly. Don't try to keep everything in perfect order everyday. Check the chemical balance every day. Maintain, as nearly as you can, an ideal level of sanitizer. Keep the pH level in the upper level of ideal range, somewhere around 7.4-7.8. If it drifts above this level, do not try to bring the level down rapidly.

A non-chlorine shock should be used a minimum of once per week to maintain accurate levels. Anti foam is available to reduce the foaming caused by high chemical levels. Be aware that too much Anti foam will cause cloudiness of the water. When water chemistry is unstable or water turbidity (cloudy water) is present, drain and re-fill Spa.

### **CARE OF THE SPA PILLOWS**

The spa pillows will provide years of comfort if treated with care. They have been positioned above the water level to minimize the bleaching effects of chlorinated water and other spa water chemicals. To extend their life, whenever the spa shell is being cleaned, the spa pillows should be removed and cleaned separately. Body oils can be removed with a mild soap and water solution. ALWAYS rinse pillows thoroughly to remove any soap residue. If the spa is not going to be used for a long period of time (during a vacation or if the spa is winterized), or if when water is being super-chlorinated remove the spa pillows until the next use of the spa.

**To remove and replace the spa pillows:**

1. Carefully lift one end of the pillow away from the spa shell.
2. Continue lifting one end until all the pillow is released from the spa shell.

**IMPORTANT:** Just pulling the pillow straight up and out of the shell recesses will eventually damage the pillow. This abuse is not covered under warranty.



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